Grade 7 Mathematics Performance Task and Scoring Guide

You are a volunteer at International Food Assistance. This organization delivers "food baskets" to help people around the world. The requirements for each food basket are shown below.

Here are the requirements for each food basket:

- Contains grains such as rice, wheat or oatmeal
- Contains legumes such as kidney beans, nuts, or lentils
- Contains exactly 35 grams (g) of oil for cooking
- Contains exactly 50 grams (g) of Super Cereal
- Has a minimum of 2100 total calories
- At least 8% of the total calories come from protein
- At least 10% of the total calories come from fat
- The cost of each basket cannot exceed $0.75

Here are the contents and quantities of a **Sample Food Basket:**

Food	Quantity	Calories	Protein (1 g = 4 calories)	Fat (1 g = 9 calories)	Cost per kilogram
Rice	800 g	920	9 g	2 g	$0.58
Lentils	240 g	812	34 g	2 g	$0.90
Oil	35 g	315	0 g	35 g	$1.20
Super Cereal	50 g	200	10 g	5 g	$0.12

This assessment has four questions about planning food baskets. You will examine factors such as nutrition and food prices. The final question requires you to design a food basket using the interactive simulation table. Read and answer each question.

Nutritional Value and Cost of Wheat and Oatmeal

Grain Oatmeal

Quantity (g) 100

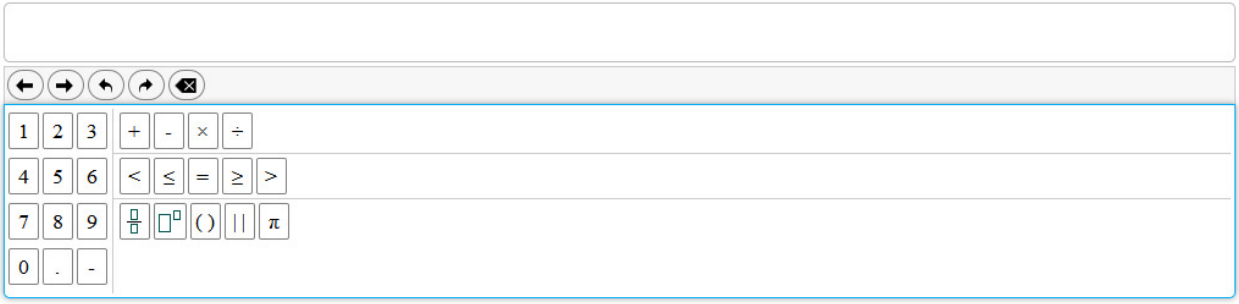
Start

Clear All Rows

Grain	Quantity (g)	Calories	Protein (g) (1 g = 4 calories)	Fat (g) (1 g = 9 calories)	Cost per kilogram

1.

Create an expression to calculate the number of calories from fat in the **Sample Food Basket**.



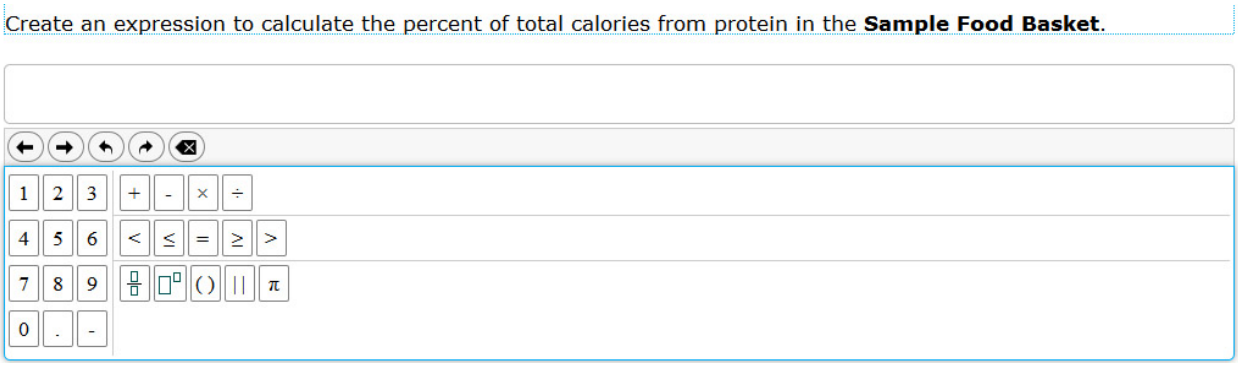
Scoring

For this item, a full-credit response (1 point) includes

- $(2 + 2 + 35 + 5)\times 9$ (and equivalent expressions).

For this item, a no-credit response (0 points) includes none of the features of a full-credit response.

2.



Scoring

For this item, a full-credit response (1 point) includes

- $100\times\frac{((9+34+10)\times 4)}{(920+812+315+200)}$ (and equivalent expressions).

For this item, a no-credit response (0 points) includes none of the features of a full-credit response.

3.

Explain how the **Sample Food Basket** does or does not meet all of the requirements for a food basket.

Type your answer in the space provided. Use specific numbers in your explanation.

Scoring

For this item, a full-credit response (1 point) includes

- confirming that there are enough quantities of each of the four requirements for the food basket

  AND

- referring to the quantity (correctly or incorrectly) determined in item 1496 as well as the percentage of total calories from fat.

  For example,

  - The food basket meets the requirements. The percentage of protein calories is about 9%. The percentage of fat is about 18%. 9% is greater than 8% and 18% is greater than 10%. There is also enough oil and super cereal.

For this item, a no-credit response (0 points) includes none of the features of a full-credit response.

For example,

- The food basket meets the requirements. There is enough protein, fat, oil and super cereal.

This item is not graded on spelling or grammar.

This item will be evaluated at rubric validation for possible conversion to multi-point.

4.

Bad weather is damaging rice crops, so you need to use wheat **or** oatmeal as the grain requirement in the food baskets. Enter different quantities in the table **Nutritional Value and Cost of Wheat and Oatmeal** to explore the changes in calories, protein, fat, and cost of replacing rice with wheat or oatmeal.

Using your information from exploring in the table **Nutritional Value and Cost of Wheat and Oatmeal**, you need to make a new food basket.

Part A
Determine the contents of a new basket that uses wheat **or** oatmeal instead of rice and meets all of the requirements. Enter your information in all six blank cells in the table.

Food	Quantity	Calories	Protein (1 g = 4 calories)	Fat (1 g = 9 calories)	Cost per kilogram
Lentils	240 g	812	34 g	2 g	$0.90
Oil	35 g	315	0 g	35 g	$1.20
Super Cereal	50 g	200	10 g	5 g	$0.12

Part B
Explain how your new basket meets all of the requirements for a food basket.

Type your answer in the space provided.

Scoring

For this item, a full-credit response (2 points) includes:

- Part A

  entering a correct quantity of wheat (100 g to 600 g) or oatmeal (100 g to 400 g).

  For example,

Food	Quantity	Calories	Protein (1 g = 4 calories)	Fat (1 g = 9 calories)	Cost per kilogram
Wheat	400 g	1360	56 g	12 g	$0.75
Lentils	240 g	812	34 g	2 g	$0.90
Oil	35 g	315	0 g	35 g	$1.20
Super Cereal	50 g	200	10 g	5 g	$0.12

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- Part B

  explaining that the values in the table meet the requirements for the food basket, by comparing the protein, fat, and cost values to those required.

  For example,

  - "My basket contains 100 grams of protein and 54 grams of fat. 100 grams of protein is equal to 400 calories. There are 2687 calories total in my basket. 400/2687 = 14.89% calories from protein. 54 grams of fat is equal to 486 calories. 486/2687 = 18.09% calories from fat. 14.89 > 8 and 18.09 > 10. The total cost of my basket should be around $0.56, so it meets the cost requirement."

For this item, a partial-credit response (1 point) includes

- not completing the table in Part A, but noting the correct quantities in Part B

  OR

- not making ALL necessary comparisons in Part B, but completing the table in Part A (with consistent quantities)
  OR
- entering an incorrect set of quantities in the table in Part A, but making consistently incorrect comparisons in Part B.

For this item, a no-credit response (0 points) includes none of the features of a full- or partial-credit response.

This item is not graded on spelling or grammar.